18. The pipe running tool of claim 14, ~~further including a block~~ connected to the top drive assembly and adapted for engaging a plurality of cables connected to the rig.

19. In a system for assembling a pipe string comprising a top drive assembly, a lower pipe engagement assembly coupled to the top drive assembly for rotation therewith and operative to releasably engage a pipe segment, and a load compensator operative to raise the lower pipe engagement assembly relative to the top drive assembly, a method for threadedly engaging a pipe segment with a pipe string, comprising the steps of:

actuating the lower pipe engagement assembly to releasably engage a pipe segment;

lowering the top drive assembly to bring the pipe segment into contact with the pipe string;

monitoring the load on the pipe string;

actuating the load compensator to raise the pipe segment a selected distance relative to the pipe string, if the load on the pipe string exceeds a predetermined threshold value; and

actuating the top drive assembly to rotate the pipe segment to threadedly engage the pipe segment and pipe string.

REMARKS

Claims 1 to 19 are pending in this application. Claims 1 and 8 have been amended. Attached hereto is a marked-up version of the changes made to the claims by the current amendment, which is captioned **"Version with markings to show changes made."** The amendments find full support in the original specification and claims. Accordingly, no new matter is presented.

The Examiner allowed claims 9 to 19 of the current application.

The Examiner rejected claim 8 as under 35 U.S.C. § 112 as being indefinite. Applicants have amended claim 8 to remove the cited ambiguity, thereby obviating this grounds for rejection.

The Examiner also rejected claims 1, 2, and 4 to 8 under 35 U.S.C. § 102 as allegedly being anticipated by Boyadjieff et al. (U.S. Patent No. 4,529,045). Applicants respectfully traverses this rejection.

Amended claim 1 recites a pipe running tool having a powered pipe engaging mechanism designed to both support the pipe segment and impart the vertical and rotational motion of the top drive assembly to

the pipe segment during many different phases of the operation of the rig, including: making-up and breaking-out the drill stems and in inserting and removing the pipe from the borehole.

In contrast, the Boyadjieff patent is directed to a lower pipe engagement apparatus designed *only* to engage and disengage new sections of pipe onto the threaded drive shaft of the top drive unit and the drill stem. Indeed, the only apparatus which could be considered a "powered engaging apparatus" disclosed in Boyadjieff (as defined by the Examiner) is the torque wrench, which is explicitly not designed to engage the pipe segment during actual operation of the top drive unit or to impart the rotational motion of the top drive to the drill stem at any time. For example, with reference to the torque wrench the Boyadjieff reference states:

> The pipe handler mechanism 21 which is suspended by and moves upwardly and downwardly with drilling unit 19 includes a torque wrench 42, an elevator 43 suspended from a carrier part 44 through links 45, two torque arresters 46 for retaining part 44 against rotation, and a structure 47 for supporting and actuating torque wrench 42. In addition, the apparatus includes an assembly 48 supporting the various elements of the pipe handler from drilling unit 19 in a relation preventing rotation of the pipe handler parts relative to the drilling unit during a drilling operation but permitting such rotation when the drill string is detached from the stem 33 of the drilling unit and is being raised or lowered by elevator 43. (Boyadjieff, col. 3, lines 26 to 39.)

Thus, during drilling it is not possible for the "pipe handling apparatus" to impart the rotational motion of the top drive as called for in claim 1. Further, the Boyadjieff patent goes on to discuss the operation of both the top drive and the torque wrench stating:

> In utilizing the apparatus for drilling a well, the equipment is in the condition illustrated in FIGS. 2 and 3, in which motor 31 acts to drive element 33 and the connected part 49 of the pipe handler, as well as drill string 14 connected to the lower end of part 49, to thereby rotate the bit and progressively drill the well. Elevator 43 may in this condition be open to

> avoid interference with downward advancement of the drill string. When the drilling has progressed to a point at which an additional stand of drill pipe must be connected to the upper end of the string, the torque wrench 42 is actuated to disconnect the top drive unit from the upper end of the drill string. This result is attained by first actuating the control valve assembly 65 at the rig floor to supply pressure fluid from source 64 to piston and cylinder mechanism 71 in a manner raising the torque wrench to its broken line position of FIG. 2, in which the splines of its upper section 55 engage splines 53 of element 49 to prevent relative rotation therebetween. Control valve 65 is then actuated to supply pressure fluid to cylinder 60 of the lower section 56 of the torque wrench in a manner causing that section to tightly grip the upper end of the top section of the drill string and retain it against rotation as the cylinders 58 of the top section are supplied with pressure fluid under the control of unit 65 in a manner causing both cylinders to turn the upper section and the connected element 49 rotatably about axis 20 relative to the upper end of the drill string to thereby break the threaded connection between section 49 and the drill string. (Boyadjieff, col. 7, line 43 to col 8, line 4.)

Thus, the Boyadjieff pipe handling apparatus is not only disengaged during drilling, but even when engaged around the pipe segment the powered pipe engaging mechanism (torque wrench) of the Boyadjieff pipe handling apparatus does not impart the rotational motion of the top drive to the pipe segment during operation, but rather utilizes a separate power source to impart oppositional rotation between the top drive-drive shaft and the threadedly connected pipe segment. As such, the Boyadjieff reference fails to teach or even suggest a lower pipe engagement apparatus designed to support a pipe segment and impart the rotational and vertical motion of the top drive to that pipe segment during make-up, break-out, and pipe insertion procedures. Accordingly, the reference cannot anticipate the pipe running tool claimed by Applicants.

In light of the above amendments and remarks, Applicants respectfully requests reconsideration of the rejections and a timely Notice of Allowance in this case. If the Examiner believes that an interview with Applicants' representative would be useful, he is invited to telephone the undersigned at the number below.

Respectfully submitted,
CHRISTIE, PARKER & HALE, LLP

By _____
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VERSION WITH MARKINGS TO SHOW CHANGES

1. (Amended) A pipe running tool mountable on a rig for use in introducing pipe into a borehole, handling pipe segments, and for engaging the pipe segments to a string of pipe, the pipe running tool comprising:

a top drive assembly adapted to be connected to the rig for vertical displacement of the top drive assembly relative to the rig, the top drive assembly including a drive shaft, the top drive assembly being operative to rotate the drive shaft; and

a lower pipe engagement assembly including a central passageway sized for receipt of the pipe segment, the lower pipe engagement assembly including a powered pipe engaging mechanism that is selectively driven into a pipe engagement position to forcibly yet releasably engage the pipe segment in a supportive relationship and substantially prevent relative rotation therebetween, the lower pipe engagement assembly being in communication with the drive shaft, whereby actuation of the top drive assembly causes the lower pipe engagement assembly to rotate such that the powered pipe engaging mechanism imparts the vertical and rotational motion of the top drive assembly to the pipe segment during operation.

8. (Amended) The pipe running tool of claim 3 [~~7~~], wherein the drive [~~members comprise~~] system comprises at least one hydraulic lift cylinder [~~cylinders~~].